AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

1. (Original) A retracting mechanism for a lens barrel, the mechanism comprising:

a non-rotatable member having an engagement surface;

a frame movable along an axis towards and away from said non-rotatable member without rotation and having a holder configured to hold an imaging element, the holder being movable between an aligned position in which the imaging element is substantially aligned with the axis and a displaced position in which the imaging element is displaced relative to the aligned position;

wherein the holder comprises an engagement surface configured to contact the engagement surface of the non-rotatable member during movement of the frame towards the non-rotatable member, and move the holder from the aligned position to the displaced position; and

wherein said non-rotatable member comprises one of a guide key and a key groove, and said frame comprises the other of said key groove and said guide key, said guide key and said key groove being slidably engageable with each other and guiding the frame in the axis direction.

2. (Original) The retracting mechanism according to claim 1, wherein said non-rotatable member comprises a stationary member which is not movable in the axis direction.

3. (Original) The retracting mechanism according to claim 1, wherein said guide

key and said key groove are engaged with each other after said holder moves to said displaced position.

4. (Original) The retracting mechanism according to claim 1, wherein the engagement surface of said non-rotatable member comprises a cam projection projecting towards the frame.

5. (Original) The retracting mechanism according to claim 4, wherein said guide key is located on said cam projection.

6. (Original) The retracting mechanism according to claim 4, wherein said frame includes an insertion hole into which said cam projection is inserted during movement of the frame towards the non-rotatable member.

7. (Original) The retracting mechanism according to claim 6, wherein said key groove is formed on an axially outwardly facing surface of said frame in said insertion hole, an inner surface of said insertion hole facing said cam projection when said cam projection is inserted into said insertion hole.

8. (Original) The retracting mechanism according to claim 7, wherein said guide key is located on a portion of a peripheral surface of said cam projection which extends along said axis.

9. (Original) The retracting mechanism according to claim 1, wherein said engagement surface of the non-rotatable member comprises a cam surface inclined with respect to said axis.

10. (Original) The retracting mechanism according to claim 1, wherein the holder is pivotally connected to said frame and configured to move between said aligned position and said displaced position.

11. (Original) The retracting mechanism according to claim 1, wherein the holder is movable in a plane generally orthogonal to said axis between said aligned position and said displaced position.

12. (Original) The retracting mechanism according to claim 1, wherein said frame comprises a ring.

13. (Original) The retracting mechanism according to claim 12, wherein the movement of said holder between said aligned position and said displaced position takes place radially inwards of said ring.

14. (Original) The retracting mechanism according to claim 1, wherein the holder is configured to be urged to the aligned position.

15. (Original) The retracting mechanism according to claim 14, wherein said holder further includes a spring configured to bias the holder towards said aligned position, and a movement limit stop configured to set a limit for movement of said holder by the biasing force of said spring.

16. (Original) The retracting mechanism according to claim 15, wherein said movement limit stop comprises a shaft supported by said frame, said shaft extending substantially parallel to said axis.

17. (Original) The retracting mechanism according to claim 1, wherein the lens barrel is incorporated in a camera.

18. (Original) An optical element retracting mechanism for a retractable lens including an optical system having a plurality of optical elements, the optical element retracting mechanism comprising:

a linearly movable ring configured to guided along an optical axis of the optical

system without rotating, and further configured to retract along said optical axis toward a plane, when said retractable lens moves from an operating state to a fully-retracted state;

a retractable holder configured to support a retractable optical element as one of the plurality of optical elements, said retractable holder positioned inside and supported by said linearly movable ring, such that said retractable holder is movable in a plane generally orthogonal to said optical axis;

a holding device configured to hold said retractable holder such that the retractable optical element remains positioned along the optical axis when said retractable lens is in the operating state;

a cam provided to a stationary member positioned behind said linearly movable ring, said cam configured to press said retractable holder to move said retractable holder such that the retractable optical element retracts to a radially retracted position outside of the optical axis when said linearly movable ring, together with said retractable holder, retracts toward the plane; and

a guide key and a key groove, one of which is located on said stationary barrel, the other of which is located on said linearly movable ring, respectively, wherein said guide key is engaged in said key groove to regulate a direction of movement of said linearly movable ring relative to said stationary barrel at least when said retractable holder is held at a radially retracted position on said plane at which said retractable optical element is positioned at the outside of the position of the optical axis.

19. (Original) The optical element retracting mechanism according to claim 18, wherein said retractable holder is configured to be pivoted on a pivot positioned inside said linearly movable ring, said pivot extending substantially parallel to said optical axis.

20. (Original) The optical element retracting mechanism according to claim 19, wherein said cam comprises:

a cam surface configured to be pressed against said retractable holder to move said retractable holder to said radially retracted position when said linearly movable ring, together with said retractable holder, retracts toward said plane, said cam surface being inclined with respect to said optical axis; and

a holding surface which extends parallel to said optical axis,

wherein during a retracting movement of said linearly movable ring when said retractable lens changes from the operating state to the fully-retracted state, said cam surface moves said retractable holder to said radially retracted position before said linearly movable ring fully retracts, and thereafter said holding surface continues to hold said retractable holder at said radially retracted position until said linearly movable ring fully retracts.

21. (Original) The optical element retracting mechanism according to claim 20, wherein said guide key engages said key groove after said retractable holder moves to said radially retracted position, wherein said guide key engages in said key groove before said linearly movable ring fully retracts.

22. (Original) The optical element retracting mechanism according to claim 20, wherein said cam comprises a cam projection projecting from said stationary member;

wherein said cam surface is located at a front end of said cam projection;

wherein said holding surface is formed on a peripheral surface of said cam projection; and

wherein said cam surface and said holding surface are formed as a continuous

surface.

23. (Original) The optical element retracting mechanism according to claim 18, wherein said cam comprises a cam projection projecting from said stationary member;

wherein said linearly movable ring includes an insertion hole into which said projection can be inserted; and

wherein said guide key and said key groove are located on one and the other of said cam projection and said linearly movable ring in said insertion hole, respectively.

24. (Original) The optical element retracting mechanism according to claim 23, wherein said guide key is located on said cam projection; and

wherein said key groove is located on an inner surface of said linearly movable ring in said insertion hole, said inner surface facing said cam projection when said cam projection is inserted into said insertion hole.

25. (Original) The optical element retracting mechanism according to claim 24, wherein said guide key is located on a portion of a peripheral surface of said cam projection which extends along said optical axis.

26. (Original) The optical element retracting mechanism according to claim 23, wherein said retractable holder is configured to be pivoted on a pivot positioned inside said linearly movable ring, said pivot extending substantially parallel to said optical axis and positioned in said insertion hole.

27. (Original) The optical element retracting mechanism according to claim 18, wherein said holding device comprises:

a spring configured to bias said retractable holder in a direction away from said radially retracted position; and

a movement limit stop to set a limit for a movement of said retractable holder by the biasing force of said spring.

28. (Original) The optical element retracting mechanism according to claim 27, wherein said movement limit stop comprises a shaft supported by said linearly movable ring, said shaft extending substantially parallel to said optical axis.

29. (Original) The optical element retracting mechanism according to claim 18, further comprising at least one linear guide linearly movable along said optical axis without rotating with respect to said stationary member;

wherein said linearly movable ring is configured to be guided along said optical axis without rotating via said linear guide.

30. (Original) The optical element retracting mechanism according to claim 18, wherein said stationary member comprises a holder configured to hold an image pick-up device.

31. (Original) The optical element retracting mechanism according to claim 18, wherein the plurality of optical elements include at least one rear optical element positioned between the retractable optical element and said stationary member when said retractable lens is in the operating state; and

wherein the retractable optical element is positioned in an off-axis space radially outside an on-axis space in which the rear optical element is positioned, such that the retractable optical element and the rear optical element are in substantially the same positional range in the optical axis direction, when the retractable lens is in the fully-retracted state.

32. (Original) The optical element retracting mechanism according to claim 31,

wherein the rear optical element comprises a plurality of optical elements including an image pick-up device at a rear end thereof.

33. (Original) The optical element retracting mechanism according to claim 18, wherein the retractable optical element comprises a lens group.

34. (Original) The optical element retracting mechanism according to claim 18, wherein the optical system comprises a zoom photographing optical system; and

wherein the retractable optical element comprises a lens group as a part of the zoom photographing optical system.

35. (Original) The optical element retracting mechanism according to claim 18, wherein the optical element retracting mechanism is incorporated in a digital camera.

36. (Original) The optical element retracting mechanism according to claim 18, wherein an axial center of said linearly movable ring extends substantially parallel to said optical axis.

37. (New) A digital camera having a body and a lens barrel, the lens barrel housed within the body, the lens barrel comprising a retracting mechanism, the retracting mechanism comprising:

a non-rotatable member having an engagement surface;

a frame movable along an axis towards and away from said non-rotatable member and having a holder configured to hold an imaging element, the holder being movable between an aligned position in which the imaging element is substantially aligned with the axis and a displaced position in which the imaging element is displaced relative to the aligned position;

wherein the holder comprises an engagement surface configured to contact the

engagement surface of the non-rotatable member during movement of the frame towards the non-rotatable member, and move the holder from the aligned position to the displaced position; and

wherein said non-rotatable member comprises one of a guide key and a key groove, and said frame comprises the other of said key groove and said guide key, said guide key and said key groove being slidably engageable with each other and guiding the frame in the axis direction.

38. (New) The camera according to claim 37, wherein said non-rotatable member comprises a stationary member which is not movable in the axis direction.

39. (New) The camera according to claim 37, wherein said guide key and said key groove are engaged with each other after said holder moves to said displaced position.

40. (New) The camera according to claim 37, wherein the engagement surface of said non-rotatable member comprises a cam projection projecting towards the frame.

41. (New) The camera according to claim 37, wherein said engagement surface of the non-rotatable member comprises a cam surface inclined with respect to said axis.

42. (New) The camera according to claim 37, wherein the holder is pivotally connected to said frame and configured to move between said aligned position and said displaced position.

43. (New) The camera according to claim 37, wherein the holder is movable in a plane generally orthogonal to said axis between said aligned position and said displaced position.

44. (New) The camera according to claim 37, wherein said frame comprises a

ring.

45. (New) The camera according to claim 37, wherein the holder is configured to be urged to the aligned position.